

AMENDMENTS

Claim amendments:

Claims 1-13 (Canceled)

14. (Currently Amended) A method of forming a silicon on insulator (SOI) device substrate, comprising:

forming a first dielectric layer on a first substrate~~silicon wafer~~;

forming a layer of silicon carbide over the first dielectric layer; and

forming a second dielectric layer on a semiconductor layer of a second substrate;

placing the second dielectric layer in contact with the silicon carbide layer;

applying heat to bond the second dielectric layer to the silicon carbide layer and fracture the second semiconductor layer; and

removing the second substrate and a portion of the semiconductor layer to yield a SOI device substrate comprised of a portion of the semiconductor layer, the second dielectric layer, the silicon carbide layer providing thermal dissipation of heat from the second semiconductor layer and the second dielectric layer, the first dielectric layer, and the first substrate~~bonding a second dielectric layer to the silicon carbide layer.~~

15. (Canceled)

16. (Currently Amended) The method claimed in claim 15, wherein the second dielectric layer is a silicon oxide layer ~~formed on the surface of a semiconductor layer.~~

17. (Original) The method claimed in claim 16, wherein the semiconductor layer is a silicon layer.

18. (Original) The method claimed in claim 16, wherein the semiconductor layer is a silicon germanium layer.

19. (Original) The method claimed in claim 18, wherein the silicon germanium layer has a composition $\text{Si}_{1-x}\text{Ge}_x$, where x is in the range of 0.1 to 0.3.

20. (Canceled)

21. (Currently Amended) A method for forming a silicon on insulator (SOI) device, comprising:

providing an SOI substrate comprising a silicon carbide thermal dissipation layer, a dielectric layer formed on the silicon carbide layer, and a layer of a semiconductor material formed on the dielectric layer;

patterning a FinFET body from the semiconductor material, the FinFET body comprising source and drain regions joined by a channel region;

forming a gate insulator around at least the channel region; and

forming a gate around the channel region, the gate being separated from the channel region by the gate insulator,

wherein the silicon carbide layer provides thermal dissipation for heat generated by the FinFET body.

22. (Original) The method claimed in claim 21, wherein the semiconductor material is silicon.

23. (Original) The method claimed in claim 21, wherein the semiconductor material is silicon germanium having a composition $\text{Si}_{1-x}\text{Ge}_x$, where x is in the range of 0.1 to 0.3.

24. (Original) The method claimed in claim 23, wherein a layer of strained silicon is grown on the FinFET body prior to forming the gate insulator.

25. (Currently Amended) The method claimed in claim 21, wherein providing the SOI substrate comprises:

forming an insulating layer on a silicon wafer;

forming a layer of silicon carbide over the insulating layer; and

placing the dielectric layer in contact with the silicon carbide layer; and

applying heat to bond the ~~bonding said~~ dielectric layer to the silicon carbide layer.

26. (Original) The method claimed in claim 21, wherein the silicon carbide layer of the SOI substrate is formed on a silicon oxide layer of a silicon wafer.

27. (Currently Amended) A method for forming a silicon on insulator (SOI) device, comprising:

providing an SOI substrate comprising a silicon carbide thermal dissipation layer, a dielectric layer formed on the silicon carbide layer, and a layer of a semiconductor material formed on the dielectric layer;

forming shallow trench isolations that extend through the semiconductor material to the dielectric layer and define an active region of the substrate; and

forming a MOSFET in the active region,

wherein the silicon carbide layer provides thermal dissipation for heat generated by the MOSFET.

28. (Original) The method claimed in claim 27, wherein the semiconductor material is silicon.

29. (Original) The method claimed in claim 27, wherein the semiconductor material is silicon germanium having a composition $\text{Si}_{1-x}\text{Ge}_x$, where x is in the range of 0.1 to 0.3.

30. (Original) The method claimed in claim 29, further comprising growing strained silicon on silicon germanium in the active region.

31. (Currently Amended) The method claimed in claim 27, wherein providing the SOI substrate comprises:

forming an insulating layer on a silicon wafer;

forming a layer of silicon carbide over the insulating layer; and

placing the dielectric layer in contact with the silicon carbide layer; and

applying heat to bond the ~~bonding said~~ dielectric layer to the silicon carbide layer.

32. (Original) The method claimed in claim 27, wherein the silicon carbide layer of the SOI substrate is formed on a silicon oxide layer of a silicon wafer.